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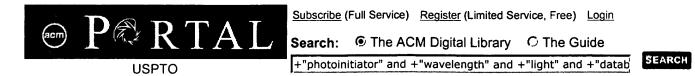
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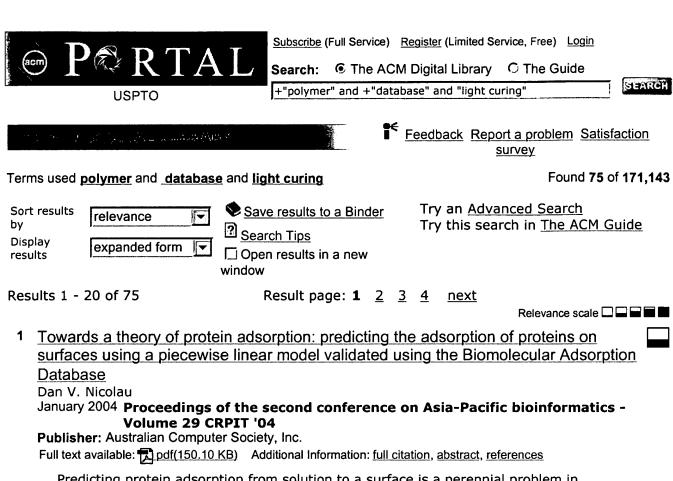
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Predicting protein adsorption from solution to a surface is a perennial problem in biomedicine and related fields. Despite constant attention in the literature, it is not currently possible to predict quantitatively the amount of adsorbed protein given environment, protein and surface parameters. In previous work, we presented the Biomolecular Adsorption Database, an online collection of protein adsorption data collected from the literature, and more recently a program and set of algorithms for ...

Keywords: database, modelling, protein adsorption

Computational models: Biologically inspired rule-based multiset programming
 paradigm for soft-computing

E. V. Krishnamurthy, V. K. Murthy, Vikram Krishnamurthy

April 2004 Proceedings of the 1st conference on Computing frontiers

Publisher: ACM Press

Full text available: pdf(289.68 KB) Additional Information: full citation, abstract, references, index terms

This paper describes a rule-based multiset programming paradigm, as a unifying theme for biological, chemical, DNA, physical and molecular computations. The computations are interpreted as the outcome arising out of deterministic, nondeterministic or stochastic interaction among elements in a multiset object space which includes the environment. These interactions are like chemical reactions and the evolution of the multiset can mimic the biological evolution. Since the reaction rules are inhere ...

Keywords: DNA, biologically-inspired paradigm, closed and open systems, first and second order logic, genetic and molecular computing, probabilistic rule based paradigm, soft computing

3 Using a planner to support office work

W. B.

W. B. Croft, L. S. Lefkowitz

April 1988 ACM SIGOIS Bulletin , Conference Sponsored by ACM SIGOIS and IEEECS TC-OA on Office information systems, Volume 9 Issue 2-3

Publisher: ACM Press

Full text available: pdf(645.78 KB)

Additional Information: full citation, abstract, references, citings, index terms

Supporting a wide range of activities in offices has been a major objective for designers of office systems. The complex nature of office work and the fact that there are no simple limits on the amount of domain knowledge required to do this work have made the achievement of this objective very difficult. Planning and representation techniques from artificial intelligence appear to have some advantages for this task in terms of flexibility and adaptability. In this paper we describe the POL ...

4 Queries with incomplete answers over semistructured data

Yaron Kanza, Werner Nutt, Yehoshua Sagiv

May 1999 Proceedings of the eighteenth ACM SIGMOD-SIGACT-SIGART symposium on Principles of database systems

Publisher: ACM Press

Full text available: pdf(1.32 MB)

Additional Information: full citation, references, citings, index terms

5 Microcomputer technology for drilling

Henry D. Shapiro, B. V. Randall

October 1986 Proceedings of the 1986 workshop on Applied computing

Publisher: ACM Press

Full text available: pdf(824.77 KB) Additional Information: full citation, abstract, references, index terms

Drilling costs are a significant portion of exploration and production budgets. For this reason, the use of complex mathematical models to optimize drilling operations began in the early 1950s, at roughly the same time as the introduction of the first commercially available digital computer. Twenty years of development and field testing resulted in the release of sophisticated drilling optimization programs to the oil industry in 1971. Despite being tied to large mainframe computers, by 197 ...

⁶ Applications and OS: Wireless sensor networks for habitat monitoring

Alan Mainwaring, David Culler, Joseph Polastre, Robert Szewczyk, John Anderson September 2002 Proceedings of the 1st ACM international workshop on Wireless sensor networks and applications

Publisher: ACM Press

Full text available: pdf(542.04 KB)

Additional Information: full citation, abstract, references, citings, index terms

We provide an in-depth study of applying wireless sensor networks to real-world habitat monitoring. A set of system design requirements are developed that cover the hardware design of the nodes, the design of the sensor network, and the capabilities for remote data access and management. A system architecture is proposed to address these requirements for habitat monitoring in general, and an instance of the architecture for monitoring seabird nesting environment and behavior is presented. The cu ...

Keywords: environmental monitoring, habitat monitoring, low power systems, sensor network architecture, wireless sensor networks

Laser optical disk: the coming revolution in on-line storage



Larry Fujitani

June 1984 Communications of the ACM, Volume 27 Issue 6

Publisher: ACM Press

Full text available: pdf(1.56 MB) Additional Information: full citation, abstract, citings, index terms

Commercially available only recently, the optical disk drive uses a laser beam to burn impressions onto a plastic disk. Employing a highly focused beam rather than a diffuse magnetic field to write, the laser optical disk drive yields storage densities up to 10 times those of magnetic disks.

Keywords: applications for laser disk drives, laser disk drives versus magnetic disk drives, laser disks and the dawn of the information age, new technology, on-line secondary storage, on-line tertiary storage, optical disk space

8 De Novo peptide sequencing via tandem mass spectrometry: a graph-theoretical



approach

Vlado Dančík, Theresa A. Addona, Karl R. Clauser, James E. Vath April 1999 Proceedings of the third annual international conference on Computational molecular biology

Publisher: ACM Press

Full text available: pdf(1.24 MB) Additional Information: full citation, references, citings, index terms

Experiments with Oval: a radically tailorable tool for cooperative work



Thomas W. Malone, Kum-Yew Lai, Christopher Fry

April 1995 ACM Transactions on Information Systems (TOIS), Volume 13 Issue 2

Publisher: ACM Press

Full text available: pdf(2.54 MB)

Additional Information: full citation, abstract, references, citings, index terms, review

This article describes a series of tests of the generality of a "radically tailorable" tool for cooperative work. Users of this system can create applications by combining and modifying four kinds of building blocks: objects, views, agents, and links. We found that user-level tailoring of these primitives can provide most of the functionality found in wellknown cooperative work systems such as aIBIS, Coordinator, Lotus Notes, and Information Le ...

Keywords: computer-supported cooperative work, end-user programming, groupware, radical tailorability

Paper augmented digital documents



François Guimbretière

November 2003 Proceedings of the 16th annual ACM symposium on User interface software and technology

Publisher: ACM Press

Full text available: pdf(1.55 MB)

Additional Information: full citation, abstract, references, citings, index

Paper Augmented Digital Documents (PADDs) are digital documents that can be manipulated either on a computer screen or on paper. PADDs, and the infrastructure supporting them, can be seen as a bridge between the digital and the paper worlds. As digital documents, PADDs are easy to edit, distribute and archive; as paper documents, PADDs are easy to navigate, annotate and well accepted in social settings. The chimeric nature of PADDs make them well suited for many tasks such as proofreading ...

Keywords: PADD, anoto, digital pen, paper augmented digital document, paper based user interface

11	Automated categorization in the international patent classification	
٦	C. J. Fall, A. Törcsvári, K. Benzineb, G. Karetka	
~	April 2003 ACM SIGIR FORUM, Volume 37 Issue 1	
	Publisher: ACM Press	
	Full text available: pdf(1.32 MB) Additional Information: full citation, abstract, references, index terms, review	
	A new reference collection of patent documents for training and testing automated categorization systems is established and described in detail. This collection is tailored for automating the attribution of international patent classification codes to patent applications and is made publicly available for future research work. We report the results of applying a variety of machine learning algorithms to the automated categorization of English-language patent documents. This procedure involves a	
	Keywords : IPC taxonomy, automated categorization, patent, support vector machines	
12	Keynote address: Visualization challenges for a new cyberpharmaceutical computing paradigm	
	Russell J. Turner, Kabir Chaturvedi, Nathan J. Edwards, Daniel Fasulo, Aaron L. Halpern, Daniel H. Huson, Oliver Kohlbacher, Jason R. Miller, Knut Reinert, Karin A. Remington, Russell Schwartz, Brian Walenz, Shibu Yooseph, Sorin Istrail October 2001 Proceedings of the IEEE 2001 symposium on parallel and large-data	
	visualization and graphics	
	Publisher: IEEE Press Full text available: pdf(3.07 MB) Additional Information: full citation, abstract, references, index terms	
	In recent years, an explosion in data has been profoundly changing the field of biology and creating the need for new areas of expertise, particularly in the handling of data. One vital area that has so far received insufficient attention is how to communicate the large quantities of diverse and complex information that is being generated. Celera has encountered a number of visualization problems in the course of developing tools for bioinformatics research, applying them to our data generation	
13	What have we learnt from using real parallel machines to solve real problems?	
>	G. C. Fox January 1989 Proceedings of the third conference on Hypercube concurrent computers and applications - Volume 2 Publisher: ACM Press	
	Full text available: pdf(4.08 MB) Additional Information: full citation, abstract, references, citings, index terms	
	We briefly review some key scientific and parallel processing issues in a selection of some 84 existing applications of parallel machines. We include the MIMD hypercube transputer array, BBN Butterfly, and the SIMD ICL DAP, Goodyear MPP and Connection Machine from Thinking Machines. We use a space-time analogy to classify problems and show how a division into synchronous, loosely synchronous and asynchronous problems is helpful. This classifies problems into those suitable for SIMD or MIMD	
	The interdisciplinary study of coordination Thomas W. Malone, Kevin Crowston March 1994 ACM Computing Surveys (CSUR), Volume 26 Issue 1	
	The semi-semi-semi-semi-semi-semi-semi-semi-	



Publisher: ACM Press

Full text available: pdf(584.94 KB)

Additional Information: full citation, abstract, references, citings, index terms, review

This survey characterizes an emerging research area, sometimes called coordination theory, that focuses on the interdisciplinary study of coordination. Research in this area uses and extends ideas about coordination from disciplines such as computer science, organization theory, operations research, economics, linguistics, and psychology. A key insight of the framework presented here is that coordination can be seen as the process of managing dependencies ...

Keywords: computer-supported cooperative work, coordination, coordination science, coordination theory, groupware

15 Papers: Continuous archival and analysis of user data in virtual and immersive game environments

Kiyoung Yang, Tim Marsh, Cyrus Shahabi

November 2005 Proceedings of the 2nd ACM workshop on Continuous archival and retrieval of personal experiences CARPE '05

Publisher: ACM Press

Full text available: pdf(3.87 MB) Additional Information: full citation, abstract, references, index terms

We present a continuous and unobtrusive approach to analyze and reason about users' personal experiences of interacting with virtual and game environments. Focusing on an immersive educational game environment that we are developing, this is achieved through the capture and storage of user's movements and events that occur as a result of interactions with and within immersive environments. Termed immersidata, we then query and analyze immersidata to make sense of user behavior. Two example ...

Keywords: breaks, classification, feature subset selection, immersidata analysis, multivariate time series

¹⁶ Aggregation: Medians and beyond: new aggregation techniques for sensor networks Nisheeth Shrivastava, Chiranjeeb Buragohain, Divyakant Agrawal, Subhash Suri



November 2004 Proceedings of the 2nd international conference on Embedded networked sensor systems

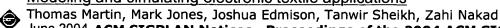
Publisher: ACM Press

Full text available: 🔂 pdf(287.99 KB) Additional Information: full citation, abstract, references, index terms

Wireless sensor networks offer the potential to span and monitor large geographical areas inexpensively. Sensors, however, have significant power constraint (battery life), making communication very expensive. Another important issue in the context of sensor-based information systems is that individual sensor readings are inherently unreliable. In order to address these two aspects, sensor database systems like TinyDB and Cougar enable innetwork data aggregation to reduce the communication c ...

Keywords: aggregation, approximation algorithms, distributed algorithms, sensor networks

17 Modeling and simulating electronic textile applications



June 2004 ACM SIGPLAN Notices, Proceedings of the 2004 ACM SIGPLAN/SIGBED conference on Languages, compilers, and tools for embedded systems

LCTES '04, Volume 39 Issue 7

Publisher: ACM Press

Full text available: pdf(421.80 KB) Additional Information: full citation, abstract, references, index terms

This paper describes our design of a simulation environment for electronic textiles (etextiles) and our experiences with that environment. This simulation environment, based upon Ptolemy II, enables us to model a diverse range of areas related to the design of electronic textiles, including the physical environment they will be used in, the behavior of the sensors incorporated into the fabric, the on-fabric network, the power consumption of the system, and the execution of the application and s ...

Keywords: context awareness, electronic textiles, smart fabrics, wearable computing

18 Link and channel measurement: A simple mechanism for capturing and replaying

wireless channels

Glenn Judd, Peter Steenkiste

August 2005 Proceeding of the 2005 ACM SIGCOMM workshop on Experimental approaches to wireless network design and analysis E-WIND '05

Publisher: ACM Press

Full text available: pdf(6.06 MB) Additional Information: full citation, abstract, references, index terms

Physical layer wireless network emulation has the potential to be a powerful experimental tool. An important challenge in physical emulation, and traditional simulation, is to accurately model the wireless channel. In this paper we examine the possibility of using on-card signal strength measurements to capture wireless channel traces. A key advantage of this approach is the simplicity and ubiquity with which these measurements can be obtained since virtually all wireless devices provide the req ...

Keywords: channel capture, emulation, wireless

19 Bridging the physical and the digital: Only touching the surface: creating affinities

between digital content and paper Paul Luff, Christian Heath, Moira Norrie, Beat Signer, Peter Herdman

November 2004 Proceedings of the 2004 ACM conference on Computer supported cooperative work

Publisher: ACM Press

Full text available: pdf(4.49 MB) Additional Information: full citation, abstract, references, index terms

Despite the wide-ranging recognition that paper remains a pervasive resource for human conduct and collaboration, there has been uncertain progress in developing technologies to bridge the paper-digital divide. In this essay we discuss the design of a technology that interweaves developments in new materials, electronics and software, and seeks to provide a cheap and accessible solution to creating new affinities between digital content, in whatever form, and ordinary paper. The technology an ...

Keywords: paper, tangible artefacts, ubiquitous computing

Analysis of file I/O traces in commercial computing environments

K. K. Ramakrishnan, Prabuddha Biswas, Ramakrishna Karedla

June 1992 ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 1992 ACM SIGMETRICS joint international conference on Measurement and modeling of computer systems SIGMETRICS '92/PERFORMANCE '92,

Volume 20 Issue 1

Publisher: ACM Press

Full text available: pdf(1.44 MB)

Additional Information: full citation, abstract, references, citings, index terms

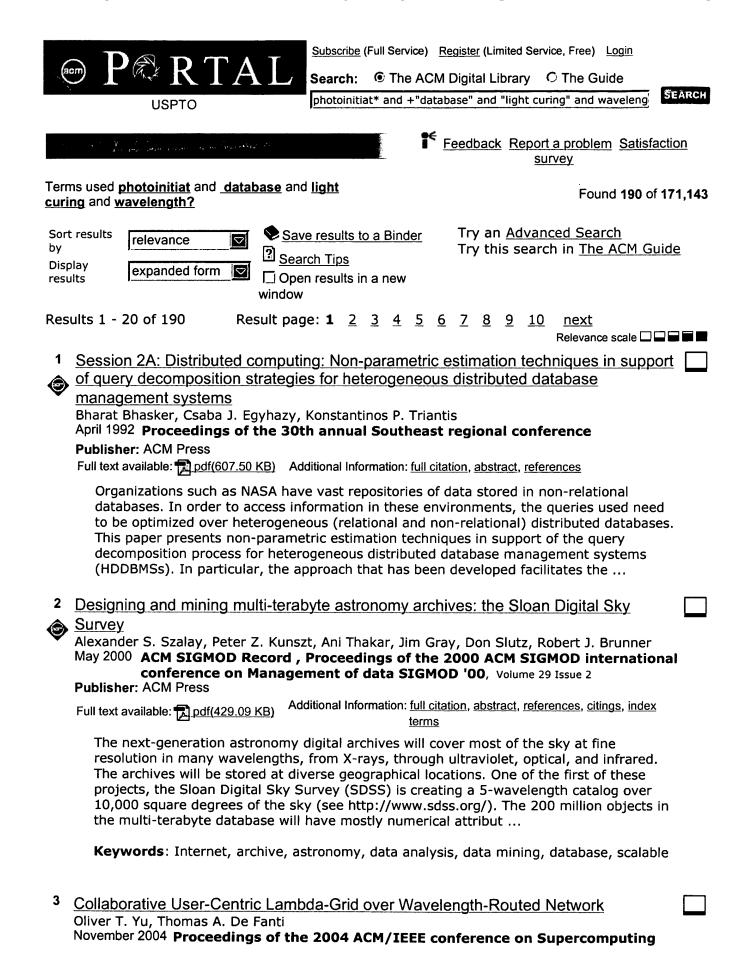
Improving the performance of the file system is becoming increasingly important to alleviate the effect of I/O bottlenecks in computer systems. To design changes to an existing file system or to architect a new file system it is important to understand current usage patterns. In this paper we analyze file I/O traces of several existing production computer sytems to understand file access behavior. Our analysis suggests that a relatively small percentage of the files are active. T ...

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	Publisher: IEEE Computer Society Full text available: ₹ pdf(195.04 KB) Additional Information: full citation, abstract	
	Emerging lambda-Grid systems employ wavelength-routed network with optical switches to enable dynamic on-demand lightpaths with multi-gigabit rate bandwidth to interconnect shared computing clusters of user domains. User-centriclambda-Grid systems enable user domains to act as distributed connectivity providers of shared wavelength resources; and as distributed network control service providers of brokering shared wavelength resources and of provisioning scheduled lightpaths. To support usercen	
4	The datacycle architecture for very high throughput database systems	
\rightarrow	Gary Herman, K. C. Lee, Abel Weinrib December 1987 ACM SIGMOD Record, Proceedings of the 1987 ACM SIGMOD international conference on Management of data SIGMOD '87, Volume 16 Issue 3	
	Publisher: ACM Press	
	Full text available: pdf(1.00 MB) Additional Information: full citation, abstract, references, citings, index terms	
	The evolutionary trend toward a database-driven public communications network has motivated research into database architectures capable of executing thousands of transactions per second. In this paper we introduce the Datacycle architecture, an attempt to exploit the enormous transmission bandwidth of optical systems to permit the implementation of high throughput multiprocessor database systems. The architecture has the potential for unlimited query throughput, simplified data man	
5	A Computational Database System for Generatinn Unstructured Hexahedral Meshes with Billions of Elements Tiankai Tu, David R. O'Hallaron November 2004 Proceedings of the 2004 ACM/IEEE conference on Supercomputing Publisher: IEEE Computer Society Full text available: pdf(222.13 KB) Additional Information: full citation, abstract	
	For a large class of physical simulations with relatively simple geometries, unstructured octree-based hexahedral meshes provide a good compromise between adaptivity and simplicity. However, generating unstructured hexahedral meshes with over 1 billion elements remains a challenging task. We propose a database approach to solve this problem. Instead of merely storing generated meshes into conventional databases, we have developed a new kind of software system called Computational Database System	
6 ②	Reflectance and texture of real-world surfaces Kristin J. Dana, Bram van Ginneken, Shree K. Nayar, Jan J. Koenderink January 1999 ACM Transactions on Graphics (TOG), Volume 18 Issue 1 Publisher: ACM Press	
	Full text available: pdf(6.94 MB) Additional Information: full citation, abstract, references, citings, index terms	
	In this work, we investigate the visual appearance of real-world surfaces and the dependence of appearance on the geometry of imaging conditions. We discuss a new texture representation called the BTF (bidirectional texture function) which captures the variation in texture with illumination and viewing direction. We present a BTF database with image textures from over 60 different samples, each observed with over 200 different combinations of viewing and illumination directions. We describe	
7	Query by humming: musical information retrieval in an audio database Asif Ghias, Jonathan Logan, David Chamberlin, Brian C. Smith	

		ne third ACM international conference on Multimedia	
•	Publisher: ACM Press		
	Full text available: fightm(27.08 KB)	Additional Information: full citation, references, citings, index terms	
	Mararanda, multimodio datal	hada angal information untrinyal witch tradition	
	Reywords . Indidified a data	bases, musical information retrieval, pitch tracking	
8	The SEQUOIA 2000 storage	benchmark	Г
٨	Mishael Chamble and Sine Francis		
4	June 1993 ACM SIGMOD Recor	d, Proceedings of the 1993 ACM SIGMOD international	
	conference on Mana Publisher: ACM Press	agement of data SIGMOD '93, Volume 22 Issue 2	
		Additional Information: <u>full citation</u> , <u>abstract</u> , <u>references</u> , <u>citings</u> , <u>index</u>	
	Full text available: 🔁 pdf(968.32 KB)	terms	
	This naner presents a hench	nark that concisely captures the data base requirements of a	
		working in the SEQUOIA 2000 project on various aspects of	
	global change research. This	benchmark has the novel characteristic that it uses real data	
		representative of Earth Science tasks. Because it appears	
		are typical of the problems of engineering and scientific	
	DBMS users, we claim that th	is benchmark represents	
9	Distributed network control for	r antical naturally	
	Rajiv Ramaswami, Adrian Segall		
		sactions on Networking (TON), Volume 5 Issue 6	
	Publisher: IEEE Press		
	Full text available: 🔁 pdf(130.54 KB)	Additional Information: full citation, references, citings, index terms	
	_		
	Keywords: network control a	and management, optical networks, protocols	
40			_
10	BIRCH: an efficient data clust	ering method for very large databases	
۹	Tian Zhang, Raghu Ramakrishna	n, Miron Livny	
•	Date 1990 MCM STOMOD KECOL	d , Proceedings of the 1996 ACM SIGMOD international gement of data SIGMOD '96, Volume 25 Issue 2	
	Publisher: ACM Press	genient of data ozor-lob yo, volume 25 153de 2	
	Full text available: 🙀 pdf(1.49 MB)	Additional Information: full citation, abstract, references, citings, index	
	, an text available. <u>partition in by</u>	<u>terms</u>	
	Finding useful patterns in larg	ge datasets has attracted considerable interest recently, and	
		d problems in this area is the identification of clusters, or	
		a multi-dimensional dataset. Prior work does not adequately	
		datasets and minimization of I/O costs. This paper presents a d BIRCH (Balanced Iterative Reducing and Clustering using	
	Hierarchies), and demonstrate		
	,, ===================================		
11	Modeling pigmented materials	s for realistic image synthesis	
	Chet S. Haase, Gary W. Meyer		
~		on Graphics (TOG), Volume 11 Issue 4	
	Publisher: ACM Press		
	Full text available: 📆 ndf(9.55 MB)	Additional Information: full citation, abstract, references, citings, index	

terms, review

This article discusses and applies the Kubelka-Munk theory of pigment mixing to computer graphics in order to facilitate improved image synthesis. The theories of additive and subtractive color mixing are discussed and are shown to be insufficient for pigmented materials. The Kubelka-Munk theory of pigment mixing is developed and the relevant equations are derived. Pigment mixing experiments are performed and the results are displayed on color television monitors. A paint program that ...

Keywords: color matching, color science, color selection, illumination modeling, pigment mixing

	THAT!	
12	High Resolution Forward And Inverse Earthquake Modeling on Terascale Computers Vokan Akcelik, Jacobo Bielak, George Biros, Ioannis Epanomeritakis, Antonio Fernandez, Omar Ghattas, Eui Joong Kim, Julio Lopez, David O'Hallaron, Tiankai Tu, John Urbanic November 2003 Proceedings of the 2003 ACM/IEEE conference on Supercomputing Publisher: IEEE Computer Society Full text available: pdf(2.85 MB) Additional Information: full citation, abstract	
	For earthquake simulations to play an important role in the reduction of seismic risk, they must be capable of high resolution and high fidelity. We have developed algorithms and tools for earthquake simulation based on multiresolution hexahedral meshes. We have used this capability to carry out 1 Hz simulations of the 1994 Northridge earthquake in the LA Basin using 100 million grid points. Our wave propagation solver sustains 1.21 teraflop/s for 4 hours on 3000 AlphaServer processors at 80% pa	
	Automated cataloging and analysis of sky survey image databases: the SKICAT	
	System Usama M. Fayyad, Nicholas Weir, S. Djorgovski December 1993 Proceedings of the second international conference on Information and knowledge management Publisher: ACM Press Full text available: pdf(1.31 MB) Additional Information: full citation, references, index terms	
14 �	Session 3: interfacing stored media I: IRW: an incremental representation for image-based walkthroughs David Gotz, Ketan Mayer-Patel, Dinesh Manocha December 2002 Proceedings of the tenth ACM international conference on Multimedia Publisher: ACM Press	
	Full text available: pdf(661.73 KB) Additional Information: full citation, abstract, references	
	We present a new representation for image-based interactive walk-throughs. The target applications reconstruct a scene from novel viewpoints using samples from a spatial image dataset collected from a plane at eye-level. These datasets consist of pose augmented 2D images and often have a very large number of samples. Our representation exploits spatial coherence and rearranges the input samples as epipolar images. The base unit corresponds to a column of the original image that can be ind	
15	Customer-managed end-to-end lightpath provisioning Jing Wu, Michel Savoie, Scott Campbell, Hanxi Zhang, Gregor V. Bochmann, Bill St. Arnaud September 2005 International Journal of Network Management, Volume 15 Issue 5	
	Publisher: John Wiley & Sons, Inc. Full text available: pdf(303.32 KB) Additional Information: full citation, abstract, references, index terms	

Customer-owned and managed optical networks bring new cost-saving benefits. Two

types of such networks are becoming widely used: metro dark fiber networks and longhaul leased wavelength networks. Customers may invoke a special QoS mechanism where end-to-end (E2E) lightpaths are dynamically established across multiple independently managed customer domains. The cost of bandwidth is substantially reduced since it largely becomes a capital cost rather than an ongoing service charge. Customers can ...

40	Del la companya de la companya del companya de la companya del companya de la com			
16	Reticle enhancement technology trends: resource and manufacturability implications	_		
٨	for the implementation of physical designs			
•	Warren Grobman, Robert Boone, Cece Philbin, Bob Jarvis			
	April 2001 Proceedings of the 2001 international symposium on Physical design			
	Publisher: ACM Press			
	Full text available: pdf(510.15 KB) Additional Information: full citation, abstract, references, citings, index terms			
	In this paper, we briefly describe the lithography developments known as RET (Resolution Enhancement Technologies), which include off-axis illumination in litho tools, Optical and Process Correction (OPC), and phase shifting masks (PSM). All of these techniques are adopted to allow ever smaller features to be reliably manufactured, and are being generally adopted in all manufacturing below 0.25 microns. However, their adoption also places certain restrictions on layouts. We explore these res			
17	A robust protocol for parallel join operation in distributed data bases			
	S. Bandyopadhyay, A. Sengupta	_		
	January 2000 Proceedings of the first international symposium on Databases in			
	parallel and distributed systems			
	Publisher: IEEE Computer Society Press			
	Full text available: pdf(1.23 MB) Additional Information: full citation, abstract, references, citings, index terms			
	Fault tolerant distributed databases use replicated data(e.g., record or relation) to handle failures of one or more nodes in a computer network. Efficient and economic access strategies for such data bases have not been investigated. In this paper, the binary hypercube, a popular model for fault tolerant interconnection networks, has been studied. It has been shown that, for a local area network based on a binary hypercube, having 2r nodes where every data is replicate			
18	Optimized Data Loading for a Multi-Terabyte Sky Survey Repository			
	Y. Dora Cai, Ruth Aydt, Robert J. Brunner			
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	Full text available: pdf(350.08 KB)			
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	Advanced instruments in a variety of scientific domains are collecting massive amounts of data that must be postprocessed and organized to support research activities. Astronomers have been pioneers in the use of databases to host sky survey data. Increasing data volumes from more powerful telescopes pose enormous challenges to state-ofthe- art database systems and data-loading techniques. In this paper we present SkyLoader, our novel framework for data loading that is being used to populate a m			
19	GPGPU: general purpose computation on graphics hardware			
<u> </u>	David Luebke, Mark Harris, Jens Krüger, Tim Purcell, Naga Govindaraju, Ian Buck, Cliff			
(2)	Woolley, Aaron Lefohn			
	August 2004 Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH			
	'04			

Publisher: ACM Press

Full text available: pdf(63.03 MB) Additional Information: full citation, abstract

The graphics processor (GPU) on today's commodity video cards has evolved into an extremely powerful and flexible processor. The latest graphics architectures provide tremendous memory bandwidth and computational horsepower, with fully programmable vertex and pixel processing units that support vector operations up to full IEEE floating point precision. High level languages have emerged for graphics hardware, making this computational power accessible. Architecturally, GPUs are highly parallel s ...

20 Disertation Abstracts



May 1988 ACM SIGIR Forum, Volume 22 Issue 3-4

Publisher: ACM Press

Full text available: pdf(1.85 MB) Additional Information: full citation

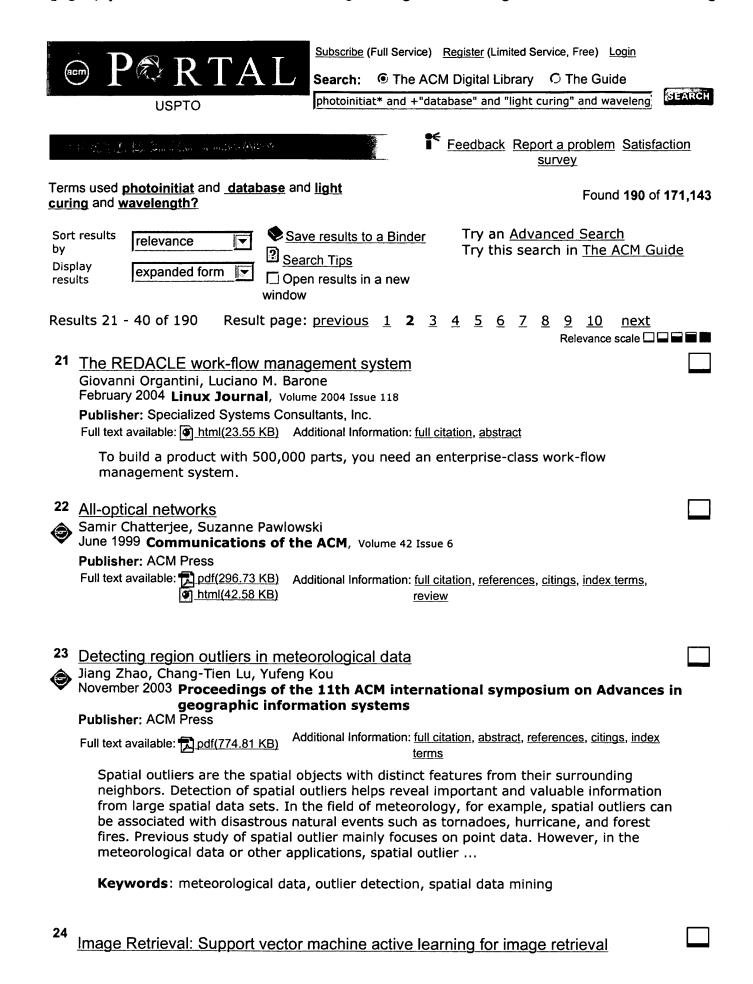
Results 1 - 20 of 190

Result page: 1 2 3 4 5 6 7 8 9 10 next

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Useful downloads: Adobe Acrobat QuickTime Windows Media Player Real Player





Simon Tong, Edward Chang

October 2001 Proceedings of the ninth ACM international conference on Multimedia

Publisher: ACM Press

Full text available: pdf(1.57 MB)

Additional Information: full citation, abstract, references, citings, index

Relevance feedback is often a critical component when designing image databases. With these databases it is difficult to specify queries directly and explicitly. Relevance feedback interactively determinines a user's desired output or query concept by asking the user whether certain proposed images are relevant or not. For a relevance feedback algorithm to be effective, it must grasp a user's query concept accurately and quickly, while also only asking the user to label a small number of ...

Keywords: active learning, image retrieval, query concept, relevance feedback, support vector machines

25 Visual image query



Krešimir Matković, László Neumann, Johannes Siglaer, Martin Kompast, Werner Purgathofer June 2002 Proceedings of the 2nd international symposium on Smart graphics **SMARTGRAPH '02**

Publisher: ACM Press

Full text available: pdf(5.98 MB) Additional Information: full citation, abstract, references

The explosion of storage media size and bandwidth has led to huge image databases. Methods are needed to find a particular image based on a crude description by the user. Keywording is not only tedious, but also subjective and therefore often incorrect. Available visual query systems have different properties, and are mostly based on some image transformation. An alternative visual query system is introduced, which finds an image similar to a user drawn sketch, or to any other reference image. A ...

Keywords: color layout query, digital image matching, human perception, image retrieval

26 Data filtering for automatic classification of rocks from reflectance spectra



Jonathan Moody, Ricardo Silva, Joseph Vanderwaart

August 2001 Proceedings of the seventh ACM SIGKDD international conference on Knowledge discovery and data mining

Publisher: ACM Press

Full text available: 🔂 pdf(597.99 KB) Additional Information: full citation, abstract, references, index terms

The ability to identify the mineral composition of rocks and soils is an important tool for the exploration of geological sites. For instance, NASA intends to design robots that are sufficiently autonomous to perform this task on planetary missions. Spectrometer readings provide one important source of data for identifying sites with minerals of interest. Reflectance spectrometers measure intensities of light reflected from surfaces over a range of wavelengths. Spectral intensity patterns may in ...

27 Perception: A photon accurate model of the human eye



Michael F. Deering

July 2005 ACM Transactions on Graphics (TOG), Volume 24 Issue 3

Publisher: ACM Press

Full text available: pdf(1.09 MB) Additional Information: full citation, abstract, references, index terms

A photon accurate model of individual cones in the human eye perceiving images on digital display devices is presented. Playback of streams of pixel video data is modeled as individual photon emission events from within the physical substructure of each display pixel. The thus generated electromagnetic wavefronts are refracted through a four surface model of the human cornea and lens, and diffracted at the pupil. The position, size, shape, and orientation of each of the five million photorecepto ...

Keywords: display devices, eye models, human eye cone models, schematic eyes, synthesized retina

28 ③	Incorporation of multimedia capabilities in distributed real-time applications Oscar González, Subhabrata Sen, Krithi Ramamritham, John A. Stankovic November 1996 Proceedings of the workshop on on Databases: active and real-time Publisher: ACM Press Full text available: pdf(385.86 KB) Additional Information: full citation, references, index terms	
29 ②	Design and implementation of an active laboratory information system Cameron Keith Tabor, Andrew Gehring, Aung Koko Htay April 1998 Proceedings of the 36th annual Southeast regional conference Publisher: ACM Press Full text available: pdf(387.88 KB) Additional Information: full citation, references, index terms	
30 ③	A comprehensive physical model for light reflection Xiao D. He, Kenneth E. Torrance, François X. Sillion, Donald P. Greenberg July 1991 ACM SIGGRAPH Computer Graphics, Proceedings of the 18th annual conference on Computer graphics and interactive techniques SIGGRAPH '91, Volume 25 Issue 4 Publisher: ACM Press Full text available: pdf(2.63 MB) Additional Information: full citation, abstract, references, citings, index	
	A new general reflectance model for computer graphics is presented. The model is based on physical optics and describes specular, directional diffuse, and uniform diffuse reflection by a surface. The reflected light pattern depends on wavelength, incidence angle, two surface roughness parameters, and surface refractive index. The formulation is self consistent in terms of polarization, surface roughness, masking/shadowing, and energy. The model applies to a wide range of materials and surface fi Keywords: comparison with experiment, reflectance model, specular and diffuse reflection	
31	Military applications: Generic models in the advanced IRCM assessment model David P. Forrai, James J. Maier December 2001 Proceedings of the 33nd conference on Winter simulation Publisher: IEEE Computer Society Full text available: pdf(323.39 KB) Additional Information: full citation, abstract, references, index terms The Advanced IRCM Assessment Model (AIRSAM) simulates an infrared (IR) guided missile engaging an aircraft equipped with infrared countermeasures (IRCM). Analysts currently use AIRSAM to predict the most likely IRCM response by an aircraft when engaged. The analyst often attempts to determine responses using IRCM or threat systems that are not characterized in detail. For AIRSAM to be an effective simulation for	

this purpose, the models for IRCMs and threat systems must allow the user to adjust ...

32 ③	Jean T. Anderson, Michael Stonebraker	
•	December 1994 ACM SIGMOD Record, Volume 23 Issue 4 Publisher: ACM Press	
	Full text available: pdf(674.07 KB) Additional Information: full citation, abstract, citings, index terms	
	Sequoia 2000 schema development is based on emerging geospatial standards to accelerate development and facilitate data exchange. This paper focuses on the metadata schema for digital satellite images. We examine how satellite metadata are defined, used, and maintained. We discuss the geospatial standards we are using, and describe a SQL prototype that is based on the Spatial Archive and Interchange Format (SAIF) standard and implemented in the Illustra object-relational database.	
	Link and channel measurement: A simple mechanism for capturing and replaying wireless channels Glenn Judd, Peter Steenkiste August 2005 Proceeding of the 2005 ACM SIGCOMM workshop on Experimental approaches to wireless network design and analysis E-WIND '05 Publisher: ACM Press	
	Full text available: pdf(6.06 MB) Additional Information: full citation, abstract, references, index terms	
	Physical layer wireless network emulation has the potential to be a powerful experimental tool. An important challenge in physical emulation, and traditional simulation, is to accurately model the wireless channel. In this paper we examine the possibility of using on-card signal strength measurements to capture wireless channel traces. A key advantage of this approach is the simplicity and ubiquity with which these measurements can be obtained since virtually all wireless devices provide the req	
	·	
	Keywords: channel capture, emulation, wireless	
	Keywords: channel capture, emulation, wireless Using formal procedure parameters to represent and transmit complex data structures Niklas Holsti March 1988 ACM SIGPLAN Notices, Volume 23 Issue 3	
	Keywords: channel capture, emulation, wireless Using formal procedure parameters to represent and transmit complex data structures Niklas Holsti	
	Keywords: channel capture, emulation, wireless Using formal procedure parameters to represent and transmit complex data structures Niklas Holsti March 1988 ACM SIGPLAN Notices, Volume 23 Issue 3 Publisher: ACM Press	
•	Keywords: channel capture, emulation, wireless Using formal procedure parameters to represent and transmit complex data structures Niklas Holsti March 1988 ACM SIGPLAN Notices, Volume 23 Issue 3 Publisher: ACM Press	
•	Using formal procedure parameters to represent and transmit complex data structures Niklas Holsti March 1988 ACM SIGPLAN Notices, Volume 23 Issue 3 Publisher: ACM Press Full text available: pdf(805.00 KB) Additional Information: full citation, index terms Data-intensive computing and digital libraries Reagan Moore, Thomas A. Prince, Mark Ellisman November 1998 Communications of the ACM, Volume 41 Issue 11	
35	Weywords: channel capture, emulation, wireless Using formal procedure parameters to represent and transmit complex data structures Niklas Holsti March 1988 ACM SIGPLAN Notices, Volume 23 Issue 3 Publisher: ACM Press Full text available: pdf(805.00 KB) Additional Information: full citation, index terms Data-intensive computing and digital libraries Reagan Moore, Thomas A. Prince, Mark Ellisman November 1998 Communications of the ACM, Volume 41 Issue 11 Publisher: ACM Press	

Full text available: pdf(28.94 MB) Additional Information: full citation, references, citings, index terms **Keywords**: light reflection, perception, realistic image synthesis 37 Concepts and paradigms of object-oriented programming Peter Wegner August 1990 ACM SIGPLAN OOPS Messenger, Volume 1 Issue 1 Publisher: ACM Press Full text available: pdf(5.52 MB) Additional Information: full citation, abstract, citings, index terms We address the following questions for object-oriented programming: What is it? What are its goals?What are its origins?What are its paradigms?What are its design alternatives? What are its models of concurrency? What are its formal computational models? What comes after object-oriented programming? Starting from software engineering goals, we examine the origins and paradigms of object-oriented programming, explore its language design alternativ ... 38 Jumping on the NII bandwagon Xiaolei Qian September 1994 ACM SIGMOD Record, Volume 23 Issue 3 Publisher: ACM Press Full text available: pdf(485.49 KB) Additional Information: full citation, abstract, index terms Many requests for proposals have been issued since the last issue of this column appeared six months ago. We first briefly touch upon some recent developments along the policy/legislation front concerning NSF, ARPA, and HPCC. We then recap the recent requests for proposals from ARPA, NSF, Air Force, NASA, and Army. 39 Data mining of multidimensional remotely sensed images Robert F. Cromp, William J. Campbell December 1993 Proceedings of the second international conference on Information and knowledge management Publisher: ACM Press Full text available: pdf(1.39 MB) Additional Information: full citation, references, citings, index terms 40 Image-based skin color and texture analysis/synthesis by extracting hemoglobin and melanin information in the skin Norimichi Tsumura, Nobutoshi Ojima, Kayoko Sato, Mitsuhiro Shiraishi, Hideto Shimizu, Hirohide Nabeshima, Syuuichi Akazaki, Kimihiko Hori, Yoichi Miyake July 2003 ACM Transactions on Graphics (TOG), Volume 22 Issue 3 **Publisher: ACM Press** Full text available: pdf(2.81 MB) Additional Information: full citation, abstract, references, index terms This paper proposes an E-cosmetic function for digital images based on physics and physiologically-based image processing. A practical skin color and texture analysis/synthesis technique is introduced for this E-cosmetic function. Shading on the face is removed by a simple color vector analysis in the optical density domain as an inverse lighting technique. The image without shading is analyzed by a previously introduced technique that extracts hemoglobin and melanin components by independent Keywords: hemoglobin, independent component analysis, inverse lighting, melanin,

physiologically-based rendering, pyramid-based texture analysis and synthesis, skin color, skin texture

Results 21 - 40 of 190

Result page: <u>previous</u> <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>9</u> <u>10</u> <u>next</u>

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Quick Tips

• Enter your search terms in lower case with a space between the terms.

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You can also enter a full question or concept in plain language.

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 Capitalize <u>proper nouns</u> to search for specific people, places, or products.

John Colter, Netscape Navigator

• Enclose a phrase in double quotes to search for that exact phrase.

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 Narrow your searches by using a + if a search term <u>must appear</u> on a page.

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• Exclude pages by using a - if a search term must not appear on a page.

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Combine these techniques to create a specific search query. The better your description of the information you want, the more relevant your results will be.

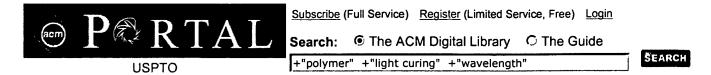
museum +"natural history" dinosaur -Chicago

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Results (page 1): photoinitiat* and +"database" and +"polymer" <paragraph> +"light curing" <paragraph... Page 2 of 2

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museum +art

• Exclude pages by using a - if a search term <u>must not appear</u> on a page.

museum -Paris

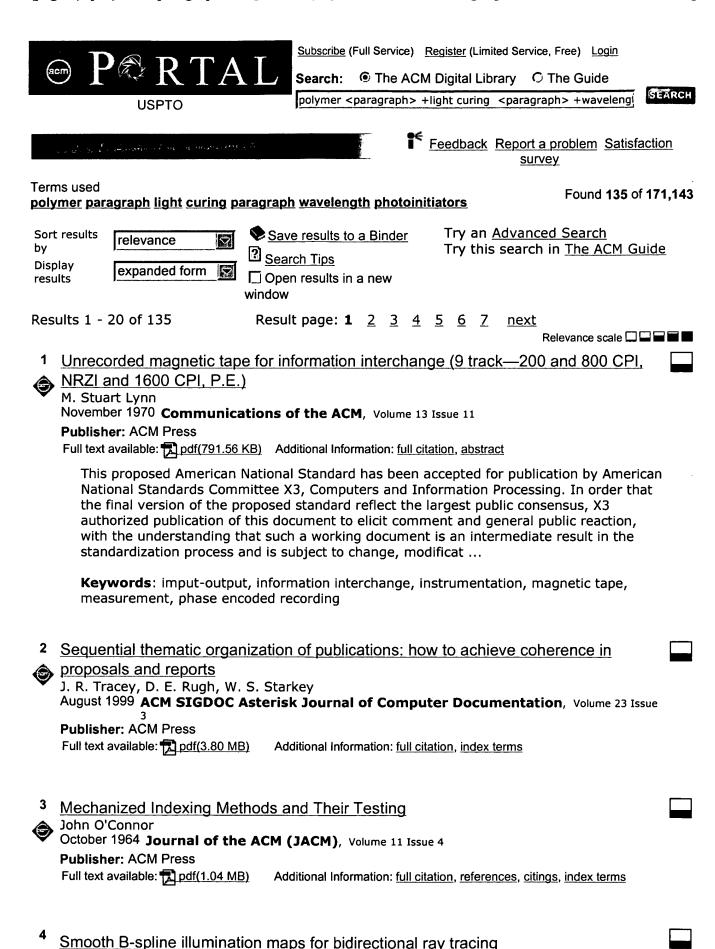
Combine these techniques to create a specific search query. The better your description of the information you want, the more relevant your results will be.

museum +"natural history" dinosaur -Chicago

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Richard A. Redner, Mark E. Lee, Samuel P. Uselton

October 1995 ACM Transactions on Graphics (TOG), Volume 14 Issue 4

Publisher: ACM Press

Full text available: pdf(4.06 MB)

Additional Information: full citation, abstract, references, citings, index

In this paper we introduce B-spline illumination maps and their generalizations and extensions for use in realistic image generation algorithms. The B-spline lighting functions (i.e., illumination maps) are defined as weighted probability density functions. The lighting functions can be estimated from random data and may be used in bidirectional distributed ray tracing programs as well as radiosity oriented algorithms. The use of these lighting functions in a bidirectional ray tracing syste ...

Keywords: B-splines, bidirectional ray tracing, dispersion, illumination maps, nonparametric density estimation

Wavelength conversion in optical networks

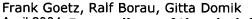
John Kleinberg, Amit Kumar

January 1999 Proceedings of the tenth annual ACM-SIAM symposium on Discrete algorithms

Publisher: Society for Industrial and Applied Mathematics

Full text available: pdf(1.18 MB) Additional Information: full citation, references, citings, index terms

6 Rendering: An XML-based visual shading language for vertex and fragment shaders



April 2004 Proceedings of the ninth international conference on 3D Web technology

Publisher: ACM Press

Full text available: pdf(570.33 KB) Additional Information: full citation, abstract, references, index terms

This paper presents a new system for the visual development of complex vertex and fragment shaders. The system makes usage of the advantages of visual programming languages. The core of the system is a Java program. With this program users can develop and test dataflow diagrams that describe the functionality of OpenGL ARB vertex and fragment programs. To get a graphical feedback the system is able to display rendered and shaded scenes immediately. The rendering of these three dimensional scenes ...

Keywords: Extensible 3D (X3D), Extensible Markup Language (XML), dataflow programming, fragment shader, shading languages, vertex shader, visual programming

7 Graphics is fun: Graphics gems revisited: fast and physically-based rendering of



gemstones

Stephane Guy, Cyril Soler

August 2004 ACM Transactions on Graphics (TOG), Volume 23 Issue 3

Publisher: ACM Press

Full text available: pdf(2.08 MB) Additional Information: full citation, abstract, references mov(23:7 MIN)

We present an algorithm for rendering faceted colored gemstones in real time, using graphics hardware. Beyond the technical challenge of handling the complex behavior of light in such objects, a real time high quality rendering of gemstones has direct applications in the field of jewelry prototyping, which has now become a standard practice for replacing tedious (and less interactive) wax carving methods. Our solution is based on

a number of controlled approximations of the physical phenomena in ...

Keywords: Crystal optics, Hardware-based rendering, real time

8 Rendering: Scalable photon splatting for global illumination

Fabien Lavignotte, Mathias Paulin

February 2003 Proceedings of the 1st international conference on Computer graphics and interactive techniques in Australasia and South East Asia

Publisher: ACM Press

Full text available: pdf(11.11 MB) Additional Information: full citation, abstract, references, index terms

In this paper, we present a new image based method for computing efficiently global illumination using graphics hardware. We propose a two pass method to compute global lighting at each pixel. In the first pass, photons are traced from the light sources and their hit points are stored. Then, in the second pass, each photons hit point is splatted on the image to reconstruct the irradiance. The main advantages of our method in comparison with previous approaches is scalability. Indeed, it can be u ...

Keywords: density estimation, global illumination, graphics hardware, photon tracing

9 Optimization of optical cross-connects with wave-mixing conversion

Abel Dasylva, Delfin Y. Montuno, Prasad Kodaypak

April 2005 IEEE/ACM Transactions on Networking (TON), Volume 13 Issue 2

Publisher: ACM Press

Full text available: pdf(625.79 KB) Additional Information: full citation, abstract, references, index terms

This paper presents new constructions of multistage wave-mixing networks with arbitrary $b \times b$ space-switching elements, where $b \ge 2$. In these networks, for a size of F fiber links and W wavelengths per link, converter requirements are $O(F \log bW)$ or O(FW/b) for rearrangeable nodes, and $O(F \log bW \log b(FW))$ or $O(FW \log b(FW)/b)$ for different types of strictly nonblocking nodes inspired from ...

Keywords: photonic cross-connect, wave-length-conversion, wave-mixing, wavelength-switching

10 Behavioral Aspects of Text Editors

David W. Embley, George Nagy

March 1981 ACM Computing Surveys (CSUR), Volume 13 Issue 1

Publisher: ACM Press

Full text available: pdf(3.44 MB) Additional Information: full citation, references, citings

11 ViBE: virtual biology experiments

Rajaram Subramanian, Ivan Marsic

April 2001 Proceedings of the 10th international conference on World Wide Web

Publisher: ACM Press

Full text available: pdf(446.09 KB) Additional Information: full citation, references, index terms

Keywords: distributed learning, software design, virtual laboratories

9	Samuel Boivin, Andre Gagalowic August 2001 Proceedings of the interactive technic Publisher: ACM Press	ne 28th annual conference on Computer graphics and
	Full text available: pdf(642.94 KB)	Additional Information: <u>full citation</u> , <u>abstract</u> , <u>references</u> , <u>citings</u> , <u>index</u> <u>terms</u> , <u>review</u>
	reflectance distribution funct done from a single photogra model of the reflectance pro	new method to recover an approximation of the bidirectional cion (BRDF) of the surfaces present in a real scene. This is ph and a 3D geometric model of the scene. The result is a full perties of all surfaces, which can be rendered under novel for example, viewpoint modification and the addition of new ique produces a reflecta
		lobal illumination, image-based rendering, inverse rendering, ice recovery, rendering, rerendering
13 ②	Jonathan Moody, Ricardo Silva, August 2001 Proceedings of th	assification of rocks from reflectance spectra Joseph Vanderwaart se seventh ACM SIGKDD international conference on very and data mining
		Additional Information: full citation, abstract, references, index terms
	the exploration of geological sufficiently autonomous to pe readings provide one importa interest. Reflectance spectro	neral composition of rocks and soils is an important tool for sites. For instance, NASA intends to design robots that are erform this task on planetary missions. Spectrometer ant source of data for identifying sites with minerals of meters measure intensities of light reflected from surfaces. Spectral intensity patterns may in
14 ③		
		Additional Information: full citation, abstract, references, index terms
	world's first network that del Key Distribution, and testing The first network link has be December 2002. It provides	niversity are building the DARPA Quantum Network, the ivers end-to-end network security via high-speed Quantum that Network against sophisticated eavesdropping attacks. en up and steadily operational in our laboratory since a Virtual Private Network between private enclaves, with user otherent implementation of quantum cryptogra
		phic protocols, error correction, key agreement protocols, im cryptography, quantum key distribution, secure networks
	Antonio Jorge G. Abelém, Micha October 2003 Proceedings of the	optically switched networks: an analysis of mirrors el A. Stanton he 2003 IFIP/ACM Latin America conference on American agenda for network research

Full text available: pdf(385.53 KB) Additional Information: full citation, abstract, references

New research perspectives opened up by the combination of IP and WDM technologies present an excellent opportunity for reformulating certain aspects of multicast transmission, bringing them more in line with the needs of future generations of IP internetworking. This paper analyses MIRRORS, which proposes modifications to traditional IP Multicast in order to improve its scalability as a function of the number of simultaneously active groups, as well as making it more appropriate for use in op ...

16 An automated micro measurement system for integrated circuit masks F. R. Ashley, E. B. Murphy, H. J. Savard June 1970 Proceedings of the 7th workshop on Design automation Publisher: ACM Press Full text available: Topdf(604.28 KB) Additional Information: full citation, abstract, references, index terms A computer controlled system for making positional measurements on a glass plate to an accuracy of 1 &mgr;m is described. Through the use of a computer, the short-comings of the Do-all coordinate measuring machine (CMM) are overcome allowing the effective use of the inherent accuracy of the CMM. The result is a measurement system having greatly enhanced capability. A plate having an array of 208 data points can be measured in about two hours, whereas without the computer control measurement ... 17 Network transparency: the plaNET approach Inder Gopal, Roch Guérin June 1994 IEEE/ACM Transactions on Networking (TON), Volume 2 Issue 3 Publisher: IEEE Press Full text available: pdf(1.79 MB) Additional Information: full citation, references, citings, index terms **Keywords**: ATM, applications, fast packet switching 18 The distributed mission training integrated threat environment system architecture and design Martin R. Stytz, Sheila B. Banks January 2001 ACM Transactions on Modeling and Computer Simulation (TOMACS), Volume 11 Issue 1 Publisher: ACM Press Additional Information: full citation, abstract, references, citings, index Full text available: pdf(151.20 KB) We describe the architecture, design, components, and functionality of the Distributed Mission Training Integrated Threat Environment (DMTITE) software. The DMTITE

We describe the architecture, design, components, and functionality of the Distributed Mission Training Integrated Threat Environment (DMTITE) software. The DMTITE architecture and design support the development and run-time operation of computer-generated actors (CGAs) in distributed simulations. The architecture and design employ object-oriented techniques, component software, object frameworks, containerization, and rapid prototyping technologies. The DMTITE architecture and design consi ...

Keywords: advanced distributed simulation, components, computer-generated actors, computer-generated forces, distributed mission training, distributed simulation, distributed virtual environments, frameworks, open architecture, synthetic environments, system architectures, virtual environments, wargames

19 <u>Towards a shared-memory massively parallel multiprocessor</u>
Daniel Litaize, Abdelaziz Mzoughi, Christine Rochange, Pascal Sainrat



April 1992 ACM SIGARCH Computer Architecture News, Proceedings of the 19th annual international symposium on Computer architecture ISCA '92, Volume 20 Issue 2

Publisher: ACM Press

Full text available: pdf(1.02 MB)

Additional Information: full citation, abstract, references, citings, index

A set of ultra high throughput (more than one Gigabits per second) serial links used as processor-memory network can lead to the starting up of a shared-memory massively parallel multiprocessor. The bandwidth of the network is far beyond values found in present shared-memory multiprocessor networks. To feed this network the memory must be serially multiported. Such a multiprocessor can actually be build with current technologies. This paper analyzes the characteristics of such a ...

20 Link and physical layer issues: On the performance of ad hoc networks with



beamforming antennas

Ram Ramanathan

October 2001 Proceedings of the 2nd ACM international symposium on Mobile ad hoc networking & computing

Publisher: ACM Press

Full text available: pdf(300.47 KB)

Additional Information: full citation, abstract, references, citings, index terms

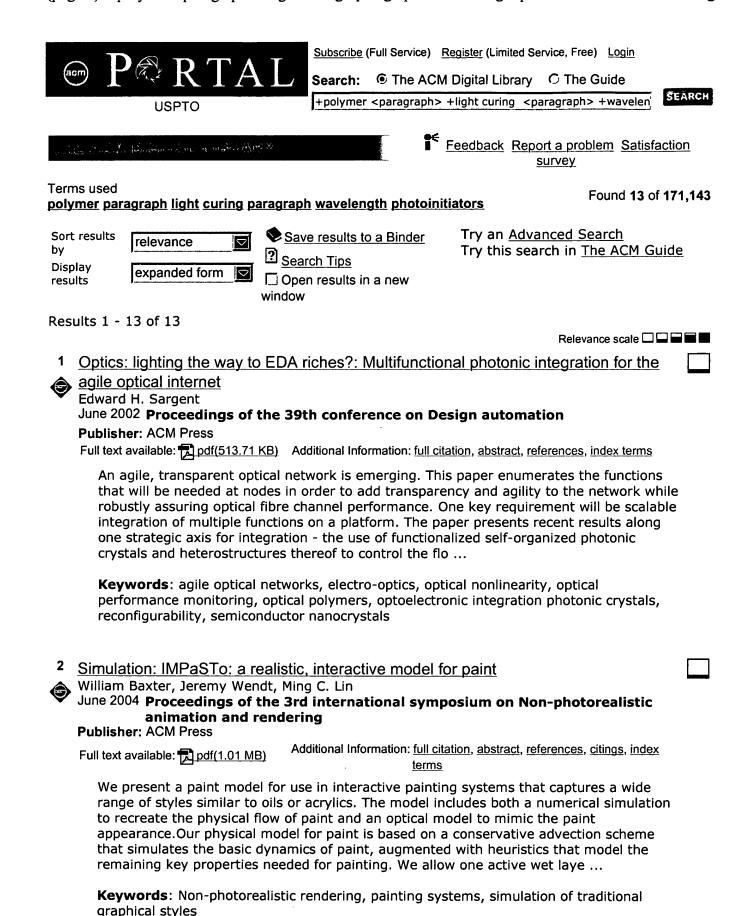
Beamforming antennas have the potential to provide a fundamental breakthrough in ad hoc network capacity. We present a broad-based examination of this potential, focusing on exploiting the longer ranges as well as the reduced interference that beamforming antennas can provide. We consider a number of enhancements to a convectional ad hoc network system, and evaluation the impact of each enhancement using simulation. Such enhancements include "aggressive" and "conservative" channel access models ...

Results 1 - 20 of 135

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3	Interconnect optimization: Predictions of CMOS compatible on-chip optical	
②	interconnect Guoqing Chen, Hui Chen, Mikhail Haurylau, Nicholas Nelson, Philippe M. Fauchet, Eby G. Friedman, David Albonesi	
	April 2005 Proceedings of the 2005 international workshop on System level interconnect prediction Publisher: ACM Press	
	Full text available: pdf(180.44 KB) Additional Information: full citation, abstract, references, index terms	
	Interconnect has become a primary bottleneck in integrated circuit design. As CMOS technology is scaled, it will become increasingly difficult for conventional copper interconnect to satisfy the design requirements of delay, power, bandwidth, and noise. On-chip optical interconnect has been considered as a potential substitute for electrical interconnect in the past two decades. In this paper, predictions of the performance of CMOS compatible optical devices are made based on current state-of-ar	
	Keywords: CMOS compatible, on-chip, optical interconnect, trends	
4	Silicon trends and limits for advanced microprocessors Mark Bohr	
9	March 1998 Communications of the ACM, Volume 41 Issue 3 Publisher: ACM Press	
	Full text available: pdf(221.08 KB) Additional Information: full citation, references, citings, index terms	
5 ②	Applications: Data collection, storage, and retrieval with an underwater sensor network I. Vasilescu, K. Kotay, D. Rus, M. Dunbabin, P. Corke November 2005 Proceedings of the 3rd international conference on Embedded networked sensor systems SenSys '05	
	Publisher: ACM Press Full text available: pdf(531.60 KB) Additional Information: full citation, abstract, references, index terms	
	In this paper we present a novel platform for underwater sensor networks to be used for long-term monitoring of coral reefs and fisheries. The sensor network consists of static and mobile underwater sensor nodes. The nodes communicate point-to-point using a novel high-speed optical communication system integrated into the TinyOS stack, and they broadcast using an acoustic protocol integrated in the TinyOS stack. The nodes have a variety of sensing capabilities, including cameras, water temperatu	
	Keywords: data muling, mobile sensor networks, underwater networks	
6	Optical interconnection technology in the telecommunications network Davis H. Hartman November 1986 Proceedings of 1986 ACM Fall joint computer conference Publisher: IEEE Computer Society Press Full text available: pdf(1.85 MB) Additional Information: full citation, references, index terms	
7 ③	Autostereoscopic displays and computer graphics Michael Halle May 1997 ACM SIGGRAPH Computer Graphics, Volume 31 Issue 2	

Publisher: ACM Press

Full text available: Topdf(625.65 KB) Additional Information: full citation, abstract, citings, index terms

Autostereoscopic displays present a three-dimensional image to a viewer without the need for glasses or other encumbering viewing aids. Three classes of autostereoscopic displays are described: reimaging displays, volumetric displays and parallax displays. Reimaging displays reproject an existing three-dimensional object to a new location or depth. Volumetric displays illuminate points in a spatial volume. Parallax displays emit directionally varying image information into the viewing zone. Para ...

8 Volume holographic data storage



Sergei S. Orlov

November 2000 Communications of the ACM, Volume 43 Issue 11

Publisher: ACM Press

html(36.13 KB)

Full text available: pdf(1.90 MB) Additional Information: full citation, references, index terms

9 Link and channel measurement: A simple mechanism for capturing and replaying



wireless channels

Glenn Judd, Peter Steenkiste

August 2005 Proceeding of the 2005 ACM SIGCOMM workshop on Experimental approaches to wireless network design and analysis E-WIND '05

Publisher: ACM Press

Full text available: pdf(6.06 MB) Additional Information: full citation, abstract, references, index terms

Physical layer wireless network emulation has the potential to be a powerful experimental tool. An important challenge in physical emulation, and traditional simulation, is to accurately model the wireless channel. In this paper we examine the possibility of using on-card signal strength measurements to capture wireless channel traces. A key advantage of this approach is the simplicity and ubiquity with which these measurements can be obtained since virtually all wireless devices provide the reg ...

Keywords: channel capture, emulation, wireless

Viable opto-electronic HPC interconnect fabrics

Ronald Luijten, Cyriel Minkenberg, Roe Hemenway, Michael Sauer, Richard Grzybowski November 2005 Proceedings of the 2005 ACM/IEEE conference on Supercomputing SC

Publisher: IEEE Computer Society Full text available: pdf(561.38 KB)

Additional Information: full citation, abstract

We address the problem of how to exploit optics for ultrascale High Performance Computing interconnect fabrics. We show that for high port counts these fabrics require multistage topologies regardless of whether electronic or optical switch components are used. Also, per stage electronic buffers remain indispensable for maintaining throughput, lossless-ness and packet sequence. Although the notion of true all-optical packet switching is not yet viable, we show that appropriate use of optical swi ...

Keywords: HPC, Interconnect, Switching, Optical Switching

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VLSI circuits: Design and optimization of board-level optical clock distribution network



for high-performance optoelectronic system-on-a-packages

Chung-Seok (Andy) Seo, Abhijit Chatterjee, Sang-Yeon Cho, Nan M. Jokerst April 2004 Proceedings of the 14th ACM Great Lakes symposium on VLSI

Publisher: ACM Press

Full text available: pdf(374.87 KB) Additional Information: full citation, abstract, references, index terms

A new approach to optical clock distribution utilizing optical waveguide interconnect technology is introduced. In this paper, we develop a new algorithm for design and optimization of board-level optical clock distribution network for high-performance optoelectronic system-on-a-packages. The optimization approach takes into account bending and propagation losses of optical waveguides. Less than 26.1psec in signal timing skew is obtained for a signal flight time of 614.38psec. About 15% reductio ...

Keywords: H-tree, asymmetric structure, clock distribution, clock routing, optical clock distribution, optical waveguide loss modeling, optimization, optoelectronic system-on-apackage

12 Optimul: An optional interconnect for multiprocessor systems



N. S. Matloff, S. Kowel, C. Eldering

June 1988 Proceedings of the 2nd international conference on Supercomputing

Publisher: ACM Press

Full text available: pdf(723.83 KB)

Additional Information: full citation, abstract, references, citings, index

An optical interconnect is proposed for multiprocessor systems, of both the tightly and loosely coupled types. This interconnect solves the problem of contention for memory and interconnect in the tightly coupled case, and the problem of network bottleneck in the loosely coupled case.

13 On time and space decomposition of complex structures P. J. Courtois



June 1985 Communications of the ACM, Volume 28 Issue 6

Publisher: ACM Press

Full text available: pdf(1.72 MB)

Additional Information: <u>full citation</u>, abstract, references, citings, index

terms, review

Models of large and complex systems can often be reduced to smaller sub-models, for easier analysis, by a process known as decomposition. Certain criteria for successful decompositions can be established.

Results 1 - 13 of 13

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